

REPLACED BY
ART 34 AMDT

transport stream, such as MPEG-2. Additionally, each system requires separate control, tuning, and program guide compiling for viewing.

What is needed is an integrated system for DBS, internet, and NTSC television programming.

5

SUMMARY OF THE INVENTION

The present invention is directed towards an integrated DBS and internet receiver system wherein a single program guide encompassing DBS program channels and network program channels are compiled.

According to another aspect of the present invention, a DBS system is
10 controllable through a linked internet receiver wherein seamless tuning of all program channels is accomplished through the internet receiver. As well, any broad-band data, including user selectable internet links received through DBS channels, may be used to retrieve and view internet data.

In one form, in a DBS/internet receiver system, the DBS system having
15 a DBS receiver adapted to receive DBS program information including program guide information, the internet receiver having an internet receiver adapted to receive network program information and data including program guide information and internet data, there is provided a method for forming a combined DBS/network program guide. The method includes, providing the
20 DBS receiver with a wide-band data/communications input/output port, providing the network receiver with a wide-band data/communications input/output port, linking the wide-band data/communications input/output port of the DBS receiver with the wide-band data/communications input/output port of the internet receiver, providing the internet receiver with the program guide
25 information received by the DBS receiver through the wide-band data/communications ports, and integrating the DBS program guide information with the network program guide information on the internet receiver to obtain a combined DBS/network program guide for viewing on a display device.

30 An advantage of the present invention is the ability to have an enhanced or super program guide that combines the program guide of a DBS system with the program guide of an NTSC system.

they are interpreted by the JVM, rather than compiled for a specific hardware architecture.

As well, URLs (Universal Resource Locators) may be received using Extended Data Services (XDS) as part of the EIA-746 specification which then
5 may be used by the browser of internet unit 32 to display the web site according to the URL by delivering the URL through the DBS data stream or through a dial-up connection. Since DBS transmits closed captioning and XDS through a second data stream (there is no VBI or Vertical Blanking Interval in the digital domain) the URLs are processed directly, rather than
10 waiting for the DBS box to re-encode them back into the VBI of the video output.

While this invention has been described as having a preferred design, the present invention can be further modified within the spirit and scope of this disclosure. This application is therefore intended to cover any variations,
15 uses, or adaptations of the invention using its general principles. For example, the wide-band data link may be replaced with any data port having the capability of transmitting the defined information. Further, this invention may be utilized with any digital set-top box, such as a digital cable box or MMDS, which provides for the simultaneous delivery of data. Further, this application
20 is intended to cover such departures from the present disclosure as come within known or customary practice in the art to which this invention pertains and which fall within the limits of the appended claims.

CLAIMS**WHAT IS CLAIMED IS:**

1. In a digital video /internet receiver system, the digital video system having a digital video receiver adapted to receive program information including program guide information, the network computer system having an internet receiver adapted to receive NTSC program information including program guide information and internet data, a method for forming a combined program guide comprising the steps of:

providing the digital video receiver with a communications input/output port;

providing the internet receiver with a communications input/output port;
linking the communications input/output port of the digital video receiver with the communications input/output port of the internet receiver;

providing the internet receiver with the program guide information received by the digital vide receiver through the communications ports; and

integrating the digital video program guide information with the NTSC program guide information on the internet receiver to obtain a combined program guide for viewing on a display device.

2. The method of claim 1, wherein the digital video receiver receives program guide information via a digital data stream, and the internet receiver receives program guide information via the VBI of an analog signal.

3. The method of claim 1, wherein the step of linking the communications input/output port of the digital video receiver with the communications input/output port of the internet receiver includes establishing a low speed data communications bus and a high speed data bus.

4. The method of claim 3, wherein the high speed data bus is clocked by a signal from the digital video receiver.

5. In a DBS/internet receiver system, the DBS system having a DBS receiver adapted to receive a plurality of DBS program channels including DBS program guide information, the internet receiver system having an internet receiver adapted to receive a plurality of network channels including NTSC program guide

information, a method of compiling an integrated DBS/NTSC program guide comprising the steps of:

- providing a wide-band data I/O port in the DBS receiver;
 - providing a wide-band data I/O port in the internet receiver system;
 - 5 coupling the wide-band data I/O port of the DBS receiver with the wide-band data I/O port of the internet receiver system;
 - providing the network receiver with the DBS program guide information received by the DBS receiver through the wide-band data I/O ports; and
 - integrating the DBS program guide information with the NTSC program
 - 10 guide information on the internet receiver to obtain a combined DBS/NTSC program guide for viewing on a display device.
6. The method of claim 5, wherein the DBS receiver receives program guide information via a program channel broadcast as part of a digital data stream, and the internet receiver receives program guide information via the VBI of an analog
- 15 signal.
7. The method of claim 5, wherein the step of coupling the wide-band data I/O port of the DBS receiver with the wide-band data I/O port of the internet receiver includes establishing a low speed data bus and a high speed data bus.
8. The method of claim 7, wherein the high speed data bus is clocked by a
- 20 signal from the DBS receiver.
9. In a DBS/internet receiver system, the DBS system having a DBS receiver adapted to receive DBS program information including program guide information and wide-band data, the internet receiver system having an internet receiver adapted to receive NTSC program information including program guide
- 25 information and internet data, the internet receiver couplable to the internet, a method of utilizing wide-band data transmitted from a direct broadcast satellite (DBS) comprising the steps of:
- providing a DBS receiver with a wide-band data/communications input/output port;
 - 30 providing an internet receiver with a wide-band data/communications input/output port;

linking the wide-band data/communications input/output port of the DBS receiver with the wide-band data/communications input/output port of the internet receiver;

providing the wide-band data received by the DBS receiver to the internet receiver over the wide-band link;

processing the wide-band data by the internet receiver; and

displaying the wide-band data on a display device coupled to the internet receiver.

10. The method of claim 9, wherein the wide-band data contains program guide information.

11. The method of claim 9, wherein the wide-band data contains interactive internet data.

12. In a DBS/internet receiver system, the DBS system having a DBS receiver adapted to receive DBS program information, the internet receiver system having an internet receiver adapted to receive and process NTSC program information and internet data, and couplable to a display device, a method of delivering internet content to the display device comprising the steps of:

transmitting wide-band data in a DBS data stream, the wide-band data including internet content data;

receiving the DBS data stream by the DBS system;

processing the DBS data stream by the DBS receiver;

providing a wide-band data link between the DBS receiver and the internet receiver;

transmitting the internet content data in the DBS data stream to the internet receiver through the wide-band data link;

processing the internet content data by the internet receiver; and

displaying the internet content data on the display device.

13. The method of claim 12, wherein the DBS data stream includes digital video, the method further comprising the steps of:

providing the DBS video to the internet receiver; and

displaying the DBS video on the display device.

14. The method of claim 13, wherein the steps of displaying DBS video and internet content data on the display device includes overlaying the internet content data on the DBS video.

15. In a DBS/internet receiver system, the DBS system having a DBS receiver adapted to receive a DBS digital data stream including wide-band data, the internet receiver system having an internet receiver adapted to receive and process NTSC program information and internet content data and couplable to a display device, a method of delivering interactive content data to the display device comprising the steps of:

transmitting interactive content data as part of the wide-band data of the DBS digital data stream;

receiving the DBS digital data stream on the DBS receiver;

processing the DBS digital data stream by the DBS receiver;

providing a wide-band data link between the DBS receiver and the internet receiver;

transmitting the interactive content data of the wide-band data to the internet receiver;

processing the interactive content data by the internet receiver; and

displaying the interactive content data on the display device.

16. The method of claim 15 wherein the DBS digital data stream includes video, the method further comprising the steps of:

providing the video to the internet receiver; and

displaying the video on the display device.

17. The method of claim 16, wherein the steps of displaying video and

interactive content data on the display device includes overlaying the interactive content data on the video.

TENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference RCA89027	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/US 99/ 14832	International filing date (day/month/year) 30/06/1999	(Earliest) Priority Date (day/month/year)
Applicant THOMSON CONSUMER ELECTRONICS, INC. et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1

☐ None of the figures.

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
US Department of Commerce
United States Patent and Trademark
Office, PCT
2011 South Clark Place Room
CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE
in its capacity as elected Office

Date of mailing (day/month/year) 21 March 2001 (21.03.01)	
International application No. PCT/US99/14832	Applicant's or agent's file reference
International filing date (day/month/year) 30 June 1999 (30.06.99)	Priority date (day/month/year)
Applicant WEHMEYER, Keith, Reynolds	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
05 January 2001 (05.01.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer C. Cupello Telephone No.: (41-22) 338.83.38
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PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

EXPRESS / EKE 816049581US

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To:

SHONEMAN David T.
THOMSON MULTIMEDIA LICENSING INC.
P.O. Box 5312
Princeton, New Jersey 08540
ETATS-UNIS D'AMERIQUE

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT
(PCT Rule 71.1)

Date of mailing
(day/month/year) 25.09.2001

Applicant's or agent's file reference
RCA89027

IMPORTANT NOTIFICATION

International application No.
PCT/US99/14832

International filing date (day/month/year)
30/06/1999

Priority date (day/month/year)
30/06/1999

Applicant
THOMSON LICENSING S.A

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Event	OA
Deadline	30 Oct 2001
Entered	DPF 10/4/01
Authorized officer	

Final Country Sel.
To Double
done

Name and mailing address of the IPEA/



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PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference RCA89027	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US99/14832	International filing date (day/month/year) 30/06/1999	Priority date (day/month/year) 30/06/1999
International Patent Classification (IPC) or national classification and IPC H04N5/445		
Applicant THOMSON LICENSING S.A		



1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 8 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 5 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☒ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 05/01/2001	Date of completion of this report 25.09.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Moorhouse, D Telephone No. +49 89 2399 8631 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/US99/14832

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17):*)

Description, pages:

1,3-10 as originally filed

2,3a,11 as received on 08/08/2001 with letter of 06/08/2001

Claims, No.:

1-8 as received on 08/08/2001 with letter of 06/08/2001

Drawings, sheets:

1/2,2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/US99/14832**

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
☐ paid additional fees.
☐ paid additional fees under protest.
☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
☒ not complied with for the following reasons:
see separate sheet

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
☐ the parts relating to claims Nos. .

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N) Yes: Claims 1-8
 No: Claims

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/US99/14832

Inventive step (IS)	Yes:	Claims	1-8
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-8
	No:	Claims	

2. Citations and explanations
see separate sheet

VI. Certain documents cited

1. Certain published documents (Rule 70.10)

and / or

2. Non-written disclosures (Rule 70.9)

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

Concerning Box IV

Claim 1 relates to a method for the combination of EPG's, in a stand-alone Internet receiver, using program guide data received over a link to a digital video receiver, i.e. a DBS receiver.

Claim 6 relates to a method for the use of a DBS channel to carry Internet content data and thus increase the amount of such data which can be received by an Internet receiver linked to a DBS receiver.

The link between these two claims is that a digital video / DBS receiver is linked together with an Internet receiver, and that the DBS / digital receiver sends some data (EPG data in claim 1; Internet content in claim 6) to the Internet receiver.

This linking feature is known from document D2, Figure 3 for example (whether or not the units are "stand alone" has been ignored, as the claimed method steps are in fact not limited to this and are indeed "transparent" to whether there is one receiver, or a suite of connected receivers).

Thus, claims 1 and 5 are not linked together by a **single general inventive concept**, as required by Rule 13.1 PCT.

Since this lack of unity arose at a very late stage and as a result of claim amendments, there was not sufficient time left to invite the Applicant to restrict or pay additional examination fees. Thus, the IPEA has proceeded according to Rule 68.1 PCT.

Concerning Box V

The following documents were cited in the Written Opinion:

D1 : WO-A-98/56172

D2 : GB-A-2 323 489

D3 : WO-A-97/49237

The subject-matter of claims 1 to 8 meets the requirements set out in Article 33 PCT.

Document D1 discloses several different configurations in Figures 1 to 3, including an NTSC and an Internet receiver in Figure 1; a digital receiver and an Internet receiver in Figure 2; and a DBS receiver and an Internet receiver in Figure 3. In each of these embodiments, the EPG data from the Internet receiver and the associated TV receiver are merged (see, for example, page 14, lines 3 to 6). In one of the embodiments, a wide band data link is provided (see the connection between elements 304, 310 and 315 in Figure 3).

However, the elements which can be considered as an Internet receiver, e.g. 116, do not receive and integrate the EPG data from the DBS receiver (as in present claim 1), nor do they receive Internet content data from the DBS receiver (as in present claim 6). Moreover, the "EPG" of document D1 is in fact related almost exclusively filled with TV related EPG data, and merely includes an icon (650), the selection of which allows the user to surf the Internet or access an email program. Data which actually relates to (TV) programs available via the Internet does not appear to be included.

Document D2 discloses a combination of a digital receiver (e.g. a DBS receiver) 88 with an Internet receiver (54, 92). It is stated that it is irrelevant to the viewer what the source of the data is - Internet or TV- and that because of this, the EPG's of the two sources may be combined (see page 13, lines 11 to 19).

However, the EPG in this document is, in fact, a "channel bar", listing sites / channels as icons. Any data from an EPG appears to be limited to the presently viewed TV channel (not received via the Internet) - see element 68 in Figure 4, for example. As is the case for D1, the icons appear to be intended to allow access to the Internet sites /

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/US99/14832

TV channels in question by clicking on them, rather than providing program guide data. Moreover, there is no use of the DBS receiver 88 to convey Internet content data.

Document D3, discloses an enhanced EPG with links to related web sites, as is the case in D1. This does not, however, appear to be an EPG for the Internet. It also doesn't disclose the Internet content via DBS feature.

The remaining prior published documents of the International Search report are less relevant, as will be seen from the following brief summary of their contents.

WO-A-97/28499 Discloses an apparatus with a decoder which can be connected to one or more of a cable (NTSC) and a DBS antenna. There is an Internet connection via a modem or ISDN connection to an 80486. However, the decoder is connected directly to the VGA circuit, and so the link 21 between the '486 and the decoder appears to be for control purposes only. The EPG in Figure 3 include a "browse button" (91) for going to Internet surfing mode, as in documents D1 and D3, but there is no EPG data for the Internet in this Figure or its description.

EP-A-0 852 361 Discloses a Java TV Platform (JTVP) which includes an Internet receiver and a DBS receiver. However, there appears to be no (wideband) communications link between decoder 24 and JTVP 12, as any data from the former is in the VBI and is thus not at a very high rate, and is not Internet content. Moreover, there is no mention of program guides.

Concerning Box VI

Certain published documents (Rule 70.10)

Application No. Patent No.	Publication Date (day/month/year)	Filing Date (day/month/year)	Priority Date (day/month/year)
WO-A-99/35843	15/07/1999	05/01/1999	05/01/1998

The priority claim of the present application and the above document have not been checked.

This document discloses the subject-matter of present claim 1. It discloses a stand-alone Internet receiver for connection with a digital receiver such as a DBS receiver (see Figure 1 and page 6, lines 8 to 19), and all the method steps :

- see the above passage for the first two claimed steps;
- see page 10, lines 8 to 13 for the last two claimed steps.

Concerning Box VIII

Claims 1 and 6 lack clarity and/or support in the description, and therefore do not meet the requirements set out in Article 6 PCT. The objections are set out in detail below.

Claims 1 and 6

It is not clear from the wording "In a ... receiver ... method comprising ...", whether protection is sought for a method, an apparatus (i.e. receiver), or a combination of the two. In summary, the category (product/apparatus vs. process/method) of the independent claims is at present unclear.

Claim 1

It is further not clear, where in the description there is support for a digital video receiver other than a **DBS receiver**. Although page 11, lines 17 to 19 mention other types of digital set-top box, they do not mention that these may have NTSC capability. Moreover, "the communications input/output port (30) of the digital video receiver" and "the communications ports" lack antecedents in the claim.

transport stream, such as MPEG-2. Additionally, each system requires separate control, tuning, and program guide compiling for viewing.

WO 98/56172 describes a system which has a program guide for providing television program information. The program guide incorporates an Internet icon for allowing a user to surf the internet by selecting the icon. In addition, D2 GB 2 323 489 A provides an electronic program guide for providing program information for both television programs and internet programs. Neither of these documents, however, describes a system for providing, for example, an integrated program guide for television program information which combines program information sources from both an NTSC receiver and a DBS receiver. In addition, neither of the documents address how to integrate two stand-alone receivers into an integrated system, as in the case of a user having already purchased a DBS receiver or an internet receiver but lacking the other capability."

What is needed is an integrated system for DBS, internet, and NTSC television programming.

SUMMARY OF THE INVENTION

The present invention is directed towards an integrated DBS and internet receiver system wherein a single program guide encompassing DBS program channels and network program channels are compiled.

According to another aspect of the present invention, a DBS system is controllable through a linked internet receiver wherein seamless tuning of all program channels is accomplished through the internet receiver. As well, any broad-band data, including user selectable internet links received through DBS channels, may be used to retrieve and view internet data.

In one form, in a DBS/internet receiver system, the DBS system having a DBS receiver adapted to receive DBS program information including program guide information, the internet receiver having an internet receiver adapted to receive network program information and data including program guide information and internet data, there is provided a method for forming a combined DBS/network program guide. The method includes, providing the DBS receiver with a wide-band data/communications input/output port, providing the network receiver with a wide-band data/communications input/output port, linking the wide-band data/communications input/output port of the DBS receiver with the wide-band data/communications input/output port of the internet receiver, providing the internet

receiver with the program guide information received by the DBS receiver through the wide-band data/communications ports, and integrating the DBS program guide information with the network program guide information on the internet receiver to obtain a combined DBS/network program guide for viewing on a display device.

- 5 An advantage of the present invention is the ability to have an enhanced or super program guide that combines the program guide of a DBS system with the program guide of an NTSC system.

they are interpreted by the JVM, rather than compiled for a specific hardware architecture.

As well, URLs (Universal Resource Locators) may be received using Extended Data Services (XDS) as part of the EIA-746 specification which then may be used by
5 the browser of internet unit 32 to display the web site according to the URL by delivering the URL through the DBS data stream or through a dial-up connection. Since DBS transmits closed captioning and XDS through a second data stream (there is no VBI or Vertical Blanking Interval in the digital domain) the URLs are processed directly, rather than waiting for the DBS box to re-encode them back into
10 the VBI of the video output.

While this invention has been described as having a preferred design, this application is intended to cover any variations, uses, or adaptations of the invention using its general principles. For example, the wide-band data link may be replaced with any data port having the capability of transmitting the defined information.
15 Further, this invention may be utilized with any digital set-top box, such as a digital cable box or MMDS, which provides for the simultaneous delivery of data. Further, this application is intended to cover such departures from the present disclosure as come within known or customary practice in the art to which this invention pertains and which fall within the limits of the appended claims.

CLAIMS

1. In a stand-alone internet receiver (32) for receiving NTSC program information including program guide information and internet data, coupled to a stand-alone digital video receiver (10) for receiving program information including program guide information, a method for forming a combined program guide comprising the steps of:
- 5 providing the internet receiver (10) with a communications input/output port (56);
- linking (66) the communications input/output port (30) of the digital video receiver with the communications input/output port of the internet receiver;
- 10 providing the internet receiver with the program guide information received by the digital video receiver through the communications ports; and
- 15 integrating the digital video program guide information with the NTSC program guide information on the internet receiver to obtain a combined program guide for viewing on a display device (48).
2. The method of claim 1, wherein the digital video receiver receives program guide information via a digital data stream, and the internet receiver receives program guide information via the VBI of an analog signal.
- 20
3. The method of claim 1, wherein the step of linking the communications input/output port of the digital video receiver with the communications input/output port of the internet receiver may include establishing a low speed data communications bus and a high speed data bus.
- 25
4. The method of claim 3, wherein the high speed data bus is clocked by a signal from the digital video receiver.
- 30

5. The method of claim 1, wherein the digital video receiver comprising a DBS receiver.

5 6. In a stand-alone DBS receiver (10) for receiving DBS program information coupled to a stand-alone internet receiver (32) for receiving internet data, a method of delivering internet content to the display device comprising the steps of:

receiving a DBS data stream including internet content data;
10 processing the DBS data stream;
providing a data link (66) between the DBS receiver and the internet receiver;

transmitting the internet content data in the DBS data stream to the internet receiver (32) through the data link, wherein the internet
15 content data is processed by the internet receiver and displayed on a display device (48).

7. The method of claim 6, wherein the DBS data stream includes digital video, the method further comprising the step of:

20 providing the DBS video to the internet receiver.
displaying the interactive content data on the display device.

8. The method of claim 6 wherein the data link is a wide-band data link.

25

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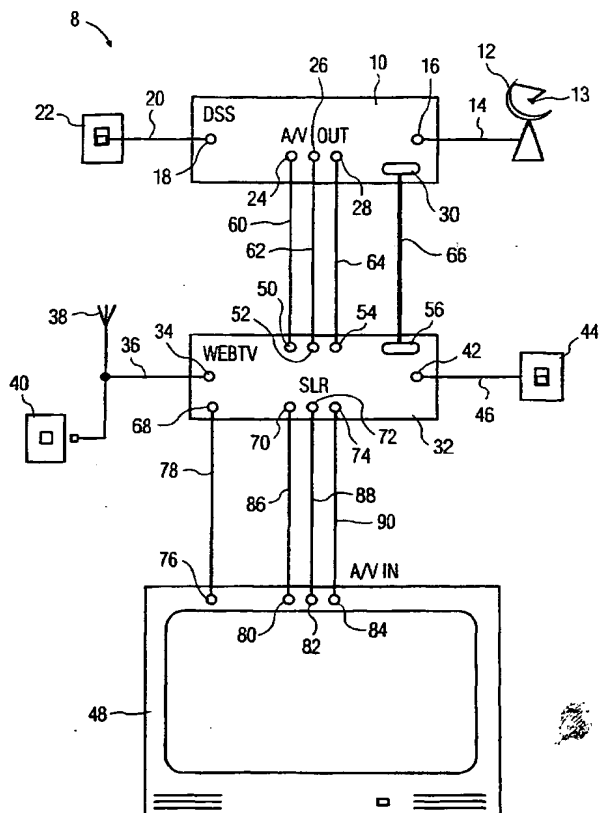
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- (72) Inventor; and
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[Continued on next page]

(54) Title: **DBS FEATURE EXTENSION ARCHITECTURE**



(57) Abstract: An enhanced electronic program guide (EPG) capable of displaying DBS program information and NTSC program information seamlessly and in real-time on a display device is accomplished, in one form, by a wide-band data link between a DBS receiver adapted to receive a DBS broadcast data stream and an internet set-top unit, the internet set-top unit adapted to receive NTSC audio/video signals and internet data/information. In another form, the DBS receiver is controlled by the internet set-top box. Supplemental information transmittable on the DBS data stream may also be displayed on the display device.

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B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

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A	WO 97 28499 A (AWARD SOFTWARE INTERNATIONAL I) 7 August 1997 (1997-08-07) page 13, line 11 - line 18 ---	1, 5, 9
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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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